CUE 02 0011

Illinois
Department of
Natural Resources

http://dnr.state.il.us

One Natural Resources Way • Springfield, Illinois 62702-1271

George H. Ryan, Governor • Brent Manning, Director

August 23, 2002

US Environmental Protection Agency
Methyl Bromide Critical Use Exemption
Global Programs Division, Mail Code 6205J
1200 Pennsylvania Ave., NW
Washington, DC 20460-0001

To whom it may concern:

Enclosed is an application for Methyl Bromide Critical Use Exemption from the State of Illinois, Department of Natural Resources, Nursery Program. If you need additional information please contact Mr. Gayle Rampley at (309)535-2185.

Sincerely,

Michael Mason, Section manager
Habitat Development
Division of Resource Protection and Stewardship

cc: Dave Horvath
Gayle Rampley

enclosure

CUE 02 0011

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Application for Critical Use Exemption of Methyl Bromide for Use in 2005 in the United States

WHY IS THIS INFORMATION NEEDED?	Under the Clean Air Act and the international treaty to protect the ozone layer (the Montreal Protocol on Substances that Deplete the Ozone Layer), the production and import of methyl bromide will be phased out in the United States on January 1, 2005. This application seeks information to support a U.S. request to produce and import methyl bromide for certain critical uses and circumstances beyond this 2005 phaseout date. The information in this application will be used to review whether your use of methyl bromide is "critical" because no technically and economically feasible alternatives are available. In order to estimate the loss as a result of not having methyl bromide available, EPA needs to compare data (yields, crop/commodity prices, revenues and costs) for your use of methyl bromide with uses of alternative pest control regimens. If you submit a well documented application with sound reasons why alternatives are not technically and economically feasible, the U.S. government can be a better advocate for your exemption request internationally.

Click on the Instructions tab located at the bottom of the screen for additional information.

OMB Control # 2060-0482

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

INSTRUCTIONS

The information provided by you in this application will be used to evaluate the requested methyl bromide use. The U.S. and other countries that are parties to the Montreal Protocol On Substances That Deplete The Ozone Layer decided that: "a use of methyl bromide should qualify as "critical" only if the nominating Party determines that:

(i) The specific use is critical because the lack of availability of methyl bromide for that use would result in a significant market disruption; and
(ii) There are no technically and economically feasible alternatives available to the user that are acceptable from the standpoint of environment and health and are suitable to the crops and circumstances of the nomination ..."

WHO APPLIES?	If you anticipate that you will need methyl bromide in 2005 because you believe there are no technically and economically feasible alternatives, then you should apply for the critical use exemption. This application may be submitted either by a consortium representing multiple users or by individual users. We encourage users with similar circumstances of use to submit a single application (for example, any number of pre-plant users with similar soil, pest, and climactic conditions can submit a single application.) If a consortium is applying for multiple methyl bromide users, the economic data should be for a representative or typical user within the consortium unless otherwise noted. If economic or technical factors (such as size of the farm) affecting the ability of this "representative user" to use alternatives are significantly different than other users in the consortium, more than one application should be submitted to reflect these differences. Please contact your local, state, regional or national commodity association and/or state representative agency to find out if they plan on submitting an application on behalf of your commodity group.
STATE CONTACTS	States that have agreed to participate in the exemption process are listed on EPA's website at www.epa.gov/ozone/mbr/cueqa.html
HOW DO I APPLY?	You may either complete an electronic (Microsoft Excel) or a printed version of the application. Please fill out each form or worksheet in the application as completely as possible. If you are completing the printed version and need extra space you may attach additional sheets as needed. Additional information may be available from your local state department of agriculture or at the sites listed below or by calling 1-800-296-1996.
SECTIONS OF WORKBOOK	Each worksheet number corresponds to the tab number in the electronic version of the application. Instructions specific to each worksheet are provided at the top of each sheet. A header row is included on each worksheet to include an application ID number that EPA will assign. **Instructions** **Worksheet 1.** Contact and Methyl Bromide Request Information **Worksheet 2.** Methyl Bromide - Historical Data 2-A. Methyl Bromide Use 1997-2000 2-B. Methyl Bromide - Crop/Commodity Yield and Revenue 1997-2000 2-C. Methyl Bromide - Crop/Commodity Yield and Revenue 2001 2-D. Methyl Bromide Use and Costs for 2001 2-E. Methyl Bromide - Other Operating Costs for 2001 2-F. Methyl Bromide - Fixed and Overhead Costs **Worksheet 3.** Alternatives - Feasibility of Alternatives to Methyl Bromide 3-A. Alternatives - Technical Feasibility Research Summary Worksheet Example Research Sum (Summary) Worksheet 3-B. Alternatives - Pest Control Regimen Costs 3-C. Alternatives - Crop/Commodity Yield and Revenue 3-D. Alternatives - Other Operating Costs **Worksheet 4.** Alternatives - Research Plans **Worksheet 5.** Additional Information **Worksheet 6.** Application Summary **Fumigation Cycle** **Climate Zone Map**

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WASHINGTON, D.C. 20460

IS MY INFORMATION CONFIDENTIAL?	The applicant may assert a business confidentiality claim covering part or all of the information in the application by placing on (or attaching to) the information, at the time it is submitted to EPA, a cover sheet, stamped or typed legend, or other suitable form of notice employing language such as trade secret, proprietary, or company confidential. Allegedly confidential portions of otherwise non-confidential documents should be clearly identified by the applicant, and may be submitted separately to facilitate identification and handling by EPA. If the applicant desires confidential treatment only until a certain date or until the occurrence of a certain event, the notice should so state. Information covered by a claim of confidentiality will be disclosed by EPA only to the extent, and by means of the procedures set forth under 40 CFR Part 2 Subpart B; 41 FR 36902, 43 FR 400000. 50 FR 51661. If no claim of confidentiality accompanies the information when it is received by EPA, it may be made available to the public by EPA without further notice to the applicant. Applicants submitting their application via e-mail assume responsibility for the confidentiality of the electronic message transmission.
WHEN IS THE INFORMATION NEEDED?	This application must be postmarked to the EPA address below no later than 120 days after the Notice was published in the Federal Register requesting critical use exemption applications.
WHERE DO I SUBMIT THE APPLICATION?	**Electronic Address for applications:** methyl.bromide@epa.gov **(When submitting an application electronically, you should also print a hard copy, sign the copy, and submit it by mail)**
	Mailing Address for applications being submitted by mail directly to the EPA: US Environmental Protection Agency Methyl Bromide Critical Use Exemption Global Programs Division, Mail Code 6205J 1200 Pennsylvania Ave, NW Washington, DC 20460-0001
	Address for applications being sent by courier or non-U.S. Postal overnight express delivery to EPA: US Environmental Protection Agency Methyl Bromide Critical Use Exemption Global Programs Division 501 3rd St. NW Washington, DC 20001 phone: (202) 564-9410
HOW CAN I RECEIVE ADDITIONAL INFORMATION?	If you have general questions about this application call: Stratospheric Ozone Hotline 1-800-296-1996

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WASHINGTON, D.C. 20460

EXCEL USER TIPS

Inserting a blank worksheet:

1. To add additional blank worksheets in the Excel file, go to the menu line at the top of the worksheet and select "Insert" then "worksheet"
2. A tab with the name "Sheet 1" will appear at the bottom of the worksheet and will be highlighted in white. Take the cursor and double click the "new tab"
3. By double clicking in the tab you can now rename the worksheet to the appropriate number letter designation (e.g., 3-A(1), 3-A(1)(a), etc.)
4. To move a newly inserted worksheet, simply drag the worksheet with your mouse to the desired location.
5. Once you add a new worksheet, Excel will automatically name each subsequently added worksheet as Sheet 2, Sheet 3, Sheet 4, etc... Follow the instructions above to rename the new blank worksheets as appropriate.

Copying and pasting an entire worksheet's contents into a blank worksheet:

1. Select the worksheet to be copied by clicking on the worksheet tab at the bottom of the screen. The tab will turn white in color when it has been selected.
2. Select the top left corner of the worksheet (this is the space to the left of the column A and above the row 1. You will know that the entire worksheet has been selected because the row and column marks as well as the worksheet itself will change to a different color.
3. Go to the menu line at the top of the worksheet and select "Edit" then "Copy".
4. Go to the blank worksheet where you want the copied information to be pasted.
5. Again, select the top left corner of the worksheet (left of column A and above row 1) to select the entire worksheet.
6. Go to the menu line at the top of the worksheet and select "Edit" then "Paste"
7. Change the title row of the newly pasted worksheet from the old worksheet number to be consistent with the worksheet tab.

Note: This is the only way you can copy a worksheet and not lose portions of the text instructions.

Viewing worksheets

Worksheets are best viewed in "Page Break Preview." To select the view of the worksheet, go to the menu bar and select "View" and then "Page Break Preview." Page break preview shows only the printable area of the worksheet, with the blue lines that surround the screen indicating the edges of each page.

To increase or decrease the size of the page that is viewable on the screen, go to the menu bar and select "View" and then "Zoom".

Navigating between worksheets

The set of four arrows on the bottom left of the screen will help you navigate between worksheets. This is necessary to access the remaining worksheet tabs in the workbook that are not viewable. The two arrows with vertical lines to either the left or right will take you to the first worksheet and to the last worksheet respectively in the workbook. The inner two arrows allow you move the worksheet tabs to the right or to the left incrementally.

The two arrows on the bottom right of the screen allow you to move the worksheet that you are viewing to the right or to the left. This is useful if the viewable area of on the screen is smaller than the entire page that is in the worksheet.

Printing worksheets

If you would like to print all worksheets that are contained in this workbook, go to the menu bar at the top of the screen and select "File" and then "Print." Then in the section of the menu that appears called "Print what," select "Entire Workbook."

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Worksheet 1. Contact and Methyl Bromide Request Information

The following information will be used to determine the amount of methyl bromide requested and the contact person for this request. It is important that we know whom to contact in case we need additional information during the review of the application.

1. Location
(Enter the state, region, or county. Provide more detail about the location if relevant to the feasibility of alternatives to methyl bromide.)

Illinois - Mason County & Union County

2. Crop/commodity
(Include all crops/commodities that benefit from the application of methyl bromide in a fumigation cycle. A fumigation cycle is the period of time between methyl bromide fumigations.)

Hardwood tree & shrub seedlings, and Prairie Forbs

3. Climate
(Individual users should enter their climate zone designation by reviewing the U.S. climate zone map. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each climate zone. This map is located at the end of this workbook or it can be reviewed online at http://www.usna.usda.gov/ Hardzone/ushzmap.html).

5b = 63%

6b 37%

4. Soil type Check the box(es) for the soil types and percent organic matter that apply to your area. If a consortium is submitting this application, please indicate the estimated percentage of consortium users in each soil type.

Soil Type:	Light	✓	Medium		Heavy	
Organic Matter:	0 to 2%	✓	2 to 5 %		over 5%	

5. Other geographic factors that may affect crop/commodity yield (e.g., water table).

Sandy soil

6. Consortium name _____ Specialty (check one)
7. Contact name Gale Rampley agronomic _____
8. Address 17855 N. CR 2400 E economic _____
Topeka IL 61567
9. Daytime phone 309-535-2185 10. FAX 309-535-3286
11. E-mail _____

List an additional contact person if available. Specialty (check one)

12. Contact name _____ agronomic _____
13. Address _____ economic _____
_____
14. Daytime phone _____ 15. FAX _____
16. E-mail _____

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Worksheet 1. Contact and Methyl Bromide Request Information

17. How much active ingredient (ai) of methyl bromide are you requesting for 2005? 9400 lbs.

If a consortium is submitting this application, the data for question 17 and 17a. should be the total for the consortium.

In the question below, area is defined as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

17a. How much area will this be applied to? Please list units. 40 Acres _____ units

18. Are you requesting methyl bromide for additional years beyond 2005? Yes ✓ No _____

18a. If yes, please list year and quantity active ingredient (ai) of methyl bromide requested in the table below and explain why you need authorization for multiple years.

We grow our hardwood tree and shrub seedlings and Prairie forbs every year, therefore we need methyl bromide to sterilize our soil for a clean start to our plants

If a consortium is submitting this application, the data below should be the total for the consortium.

In the table below, area is defined as follows for each user: acres for growers, cubic feet for post harvest operations, and square feet for structural applications.

Year	Quantity ai (lb.) of Methyl Bromide	Area to be Treated	Unit of Area Treated
2006	9400 lbs	40 Acres	
2007	9400 lbs	40 Acres	

19. Target Pest(s) or Pest Problem(s):
(Be as specific as possible about the species or classes of pests relevant to the feasibility of alternatives.)

Weed seed, Insects, Fungi, and nematodes

20. If applying as a consortium for many users of methyl bromide, please define a *representative user*. Define exactly, issues such as size of the operation (acres treated with methyl bromide for growers, cubic feet for post-harvest operations, and square feet for structural applications), whether the representative user owns or rents the land or operation, intensity of methyl bromide use (treat regularly or only when pest reaches a threshold), pest pressure, etc.

20a. Explain why this user represents the typical user in the consortium.

Worksheet 2. Methyl Bromide - Historical Use of Methyl Bromide

Purpose of Data: To establish a baseline estimate of crop/commodity yields, gross revenues, and costs using methyl bromide.		
Worksheet	**Title**	Instructions specific to each worksheet are located at the top of each sheet.
2-A	Methyl Bromide Use for 1997 - 2000	This worksheet provides data in actual usage for 1997-2000.
2-B	Methyl Bromide - Crop/Commodity Yield and Gross Revenue for 1997-2000	This worksheet provides crop/commodity yield and gross revenue for 1997 through 2000.
2-C	Methyl Bromide - Crop/Commodity Yield and Gross Revenue for 2001	This data provides historical information on crop/commodity yield and gross revenue for 2001.
2-D	Methyl Bromide Use and Costs for 2001	This worksheet isolates use and cost data for 2001.
2-E	Methyl Bromide - Other Operating Costs for 2001	This data is needed to estimate a baseline for operating costs in order to estimate the impact on operating profit and short-run economic viability as a result of not using methyl bromide.
2-F	Methyl Bromide - Fixed And Overhead Costs for 2001	This data is needed to estimate a baseline for total costs in order to estimate the impact on profitability and long-run economic viability as a result of not using methyl bromide.

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Worksheet 2-A. Methyl Bromide - Use 1997-2000

If a consortium is submitting this application, all data should reflect the **actual** data for the consortium.

Col A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-M for each formulation, if known, and/or the totals and averages for all formulations. If you enter only the total and averages for all formulations in the last row of the table, please describe in the comments section the formulations typically used, or the approximate proportions of the formulations used.
Col B, E, H, K: Actual Area Treated	Enter the total actual area treated. Note: This number should be the total actual area treated by the individual user or total actual area for the entire consortium, for the year indicated.
Col C, F, I, L: Actual Total lbs. ai of Methyl Bromide Applied	Enter the actual total pounds active ingredient (ai) of methyl bromide applied. Note: This number should be the total pounds ai applied by the individual user or the entire consortium, for the year indicated.
Col D, G, J, M: Actual Average lbs. ai Applied per Area	The average application rates in pounds ai of methyl bromide per area are automatically calculated from the previous 2 columns.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Formulation of Methyl Bromide	1997			1998			1999			2000		
	Total Actual Area Treated	Actual Total lbs. ai of Methyl Bromide Applied	Average lbs. ai Applied per Area	Total Actual Area Treated	Actual Total lbs. ai of Methyl Bromide Applied	Average lbs. ai Applied per Area	Total Actual Area Treated	Actual Total lbs. ai of Methyl Bromide Applied	Average lbs. ai Applied per Area	Total Actual Area Treated	Actual Total lbs. ai of Methyl Bromide Applied	Average lbs. ai Applied per Area
over 95% methyl bromide	37½	12,863	343	37	12,691	343						
75% methyl bromide, 25% chloropicrin												
67% methyl bromide, 33% chloropicrin							41	9635	235	39½	9283	235
50% methyl bromide, 50% chloropicrin												
__% methyl bromide, __% chloropicrin												
__% methyl bromide, __% chloropicrin												
All formulations of methyl bromide												

Comments:

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Worksheet 2-B. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 1997-2000

If a consortium is submitting this application, the data for this table should reflect the **actual averages** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 1997 - 2000 when using methyl bromide. Post-harvest and structural users may work with EPA to modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Year	Be sure to enter the year. Use as many rows as needed for each year for all the crops/commodities in the fumigation cycles from 1997 to 2000. If a fumigation cycle overlaps more than one calendar year, then the year of the fumigation cycle is the year methyl bromide was applied.
Col. B: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in each fumigation cycle. (For example, if normally methyl bromide is applied and tomatoes are grown and harvested followed by peppers without an additional treatment of methyl bromide, then both tomatoes and peppers would be part of the same fumigation cycle.) See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodities produced per area.
Col. E: Price	Enter the average prices received by the users for the year and crop/commodity indicated (1997-2000).
Col. F: Revenue	This number is calculated automatically using the values you entered in Cols. D and E. You may override the formula to enter a different revenue. Please explain why the revenue amount is different in the comment section below.
Total Revenue for 1997-2000	Enter the total revenue per year by adding the revenue for all crops for that year.
Average Revenue per Year:	The average revenue per year is calculated automatically using the summary data you enter for each year.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A Year Methyl Bromide was Applied	B Crop/Commodity	C Unit of Crop/Commodity (e.g., pounds, bushels)	D Crop/Commodity Yield (Units per area)	E Price (per unit of crop/commodity)	F Revenue (per area)
1997	Tree Seedlings	individual Tree	127,273/Acre	68 Cents / Tree	$86,546.00 /Acre
	Shrub Seedlings	individual Shrub	78,000/Acre	34 Cents / Shrub	$26,520.00 /Acre
	Fert root stock	individual Root Stock	314,500/Acre	4 Cents for each	$12,580.00 /Acre
	Fert Seed	pounds	500	#39.00 / Pound	$19,650.00 /Acre
1998	Tree Seedlings	Individual Trees	136,364/Acre	68 Cents / Tree	$92,728.00 /Acre
	Shrub Seedlings	Individual Shrubs	50,800 /Acre	34 Cents / Shrub	$17,272.00 /Acre
	Fert Root Stock	Individual Root Stock	230,000/Acre	4 Cents for each	$9,200.00 /Acre
	Fert Seed	Pounds	550/Acre	#40.00 / Pound	$22,000.00 /Acre
1999	Tree Seedlings	Individual Trees	133,333/Acre	60 Cents / Tree	$80,000.00 /Acre
	Shrub Seedlings	Individual Shrubs	72,000/Acre	42 Cents / Shrub	$30,240.00 /Acre
	Fert Root Stock	Individual Root Stock	287,500/Acre	4 Cents for each	$11,500.00 /Acre
	Fert Seed	Pounds	510/Acre	#40.00 / Pound	$20,400.00 /Acre
				Total Revenue for 1997	$145,296.00 /Acre
				Total Revenue for 1998	$141,200.00 /Acre
				Total Revenue for 1999	$142,140.00 /Acre
				Total Revenue for 2000	$162,879.00 /Acre
				Average Revenue Per Year	#VALUE!

Methyl Bromide is applied the fall before planting

147,879.00 /Acre Average

Comments:	2000	Tree Seedlings	Individual Trees	148,485/Acre	60 cents per Tree	$89,091.00 /Acre
		Shrub Seedlings	Individual Shrubs	104,000/Acre	42 Cents per Shrub	$43,680.00 /Acre
		Fert Root Stock	Individual Root Stock	210,000/Acre	4 Cents for each	$84,000.00 /Acre
		Fert Seed	pounds	540/Acre	40.00 / Pound	21,600.00 /Acre

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Worksheet 2-C. Methyl Bromide - Crop/Commodity Yield and Gross Revenue 2001

If a consortium is submitting this application, the data for this table should reflect the **representative user** for the consortium.

The purpose of this worksheet is to estimate the gross revenue for 2001when using methyl bromide. Post-harvest users may modify this form to accommodate differences when providing gross revenue data. If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a different year. However, all applicants must complete this worksheet for the year 2001 regardless. Please explain in the comment section at the bottom of the worksheet why 2001 is not considered a typical year, if that is the case.

Col. A: Crop/Commodity	Enter all crops/commodities that benefit from methyl bromide in the fumigation cycle (interval between fumigations) beginning with the treatment of methyl bromide in 2001. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the crops during the entire interval. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g. fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of methyl bromide affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for each crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor.
Col. E: Price	Enter average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Revenue	Revenue is automatically calculated using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section below.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A Crop/Commodity	B Price Factors (grade, time, market)	C Unit of Crop/Commodity (e.g., pounds, bushels)	D Crop/Commodity Yield (Units per area)	E Price (per unit of crop/commodity)	F Revenue (per area)	
Tree Seedlings		Individual Tree	120,0160/Acre	68 Cents/Tree	81,641[60] $ 0.00	/Acre
Shrub Seedlings		Individual Shrub	77,260/Acre	34 Cents/Tree	26,269[04] $ 0.00	/Acre
Forl Root stock		Individual Root stock	130,000/Acre	4 Cents each	5200[00] $ 0.00	/Acre
Forl Seed		pounds	500/Acre	39.30 per pound	19,650 $ 0.00	/Acre
					$ 0.00	
					$ 0.00	
					$ 0.00	
					$ 0.00	
					$ 0.00	
					$ 0.00	
					$ 0.00	
					$ 0.00	
				Total Revenue	132,760[00] $ 0.00	/Acre

Comments: Price Factor - Without Methyl Bromide, we would have much more manual labor pulling weeds, also the disease and insect would take its toll on our numbers.

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Worksheet 2-D. Methyl Bromide - Use and Costs for 2001

If a consortium is submitting this application, the data in Cols. B, C, D, and E should reflect the *representative user* in the consortium. The data in Col. F should reflect the **actual** area treated by all users in the consortium.

If the methyl bromide is custom applied then put the cost per area in Column G and fill in the average lb ai of methyl bromide applied per area (Col B) and the Total Actual Area Treated (Col F).

If 2001 was not a typical year for the individual or for the representative user of a consortium, the applicant may provide additional data for a *different* year. However, all worksheet why 2001 is not considered a typical year.

Col. A: Formulation of Methyl Bromide	Enter the appropriate data in Col B-G for each formulation, if known, and/or the totals and averages for all formulations of methyl bromide. If you just enter data in the bottom row in the table (All formulations of methyl bromide), please describe in the comments, the relative usage of the various formulations, to the extent known.
Col B: Average lbs. active ingredient (ai) of Methyl Bromide Applied per Area	Enter the average pounds active ingredient (ai) of methyl bromide applied per area.
Cols. C, D, E, G: Prices and Costs	Enter the average price per pound active ingredient (ai) of methyl bromide in Col. C and the average cost of applying methyl bromide per area treated in Col. D. In Col. E, enter the average other costs per area associated with applying methyl bromide (e.g., tarps). *Column G will be calculated automatically using the values you entered in columns B-E.* If methyl bromide is custom applied, enter the cost per area in Col. G and fill in Cols. B and F.
Col. F: Actual Area Treated	Enter the **actual** area treated. Note: This number should be the total area treated by all users in the consortium.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G
Formulation of Methyl Bromide	**Lb. ai of Methyl Bromide Applied per Area (2001 Average)**	**Price per lb. ai of Methyl Bromide (2001 Average)**	**Cost of Applying Pesticide per Area (2001 Average)**	**Other MBr Costs (e.g. tarps, etc.) per Area (2001 Average)**	**Total Actual Area Treated in the Consortium**	**Cost per Area**
over 95% methyl bromide						$ 0.00
75% methyl bromide, 25% chloropicrin						$ 0.00
67% methyl bromide, 33% chloropicrin	235 #			$ 1650/Acre	32 Acres	52,800 $ 0.00
50% methyl bromide, 50% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
__% methyl bromide, __% chloropicrin						$ 0.00
						$ 0.00
All formulations of methyl bromide						$ 0.00

Comments:

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Worksheet 2-E. Methyl Bromide - *Other* Operating Costs for 2001

Do not include methyl bromide costs.

If a consortium is submitting this application, the data for this table should reflect a **representative user**.

Enter all operating costs except methyl bromide costs incurred during the fumigation cycle (interval between fumigations) beginning in 2001. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. Enter these costs in Col B for custom operations, or in Col C and D for operations done by user.

Submit crop budgets for each crop, if available. You may submit crop budgets electronically or in hard copy. If your costs are significantly different than the crop budgets, please explain in the comments.

Col A: Operation	Identify in Col A the operations (except methyl bromide) to which the costs apply. For growers, these operations should include but are not limited to (1) prepare soil, (2) fertilize, (3) irrigate, (4) plant, (5) harvest, (6) other pest controls, etc. You must include all other operating costs.
Col B: Custom Operation Cost	If you incur custom operation costs, enter those costs in Col. B.
Col C: Material Cost per Area	If you do not incur custom operation costs, enter the material cost per area.
Col D: Labor Cost per Area	If you do not incur custom operation costs, enter the labor cost per area.
Col E: Total Cost per Area	The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col F: Typical Equipment Used	Identify the typical equipment used for operations done by user. Please be specific, such as tractor horsepower. No cost data is required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation	Custom Operation Cost per Area	Operation Done by User			
		Material Cost per Area	Labor Cost per Area	Total Cost per Area	Typical Equipment Used
Plowing		4.00 /Acre	4.00/Acre	8.00 $ 0.00	Tractor + Plow
Discing		4.00 /Acre	4.00 /Acre	8.00 $ 0.00	Tractor + Disc
Field Cultivating - twice		10.00 /Acre	8.00 /Acre	18.00 $ 0.00	Tractor + Field Cultivator
Bed forming		12.00/Acre	6.00 /Acre	18.00 $ 0.00	Tractor + Bed Former
Planting		7230.00/Acre	24.00/Acre	7254.00 $ 0.00	Tractor + Planter
Mulching		10.00 Acre	12.00/Acre	22.00 $ 0.00	Tractor + Mulching machine
Weeding - Manually		5.00/Acre	2020.00/Acre	2025.00 $ 0.00	Tractor + Wagon
Fertilizing		70.00/Acre	16.00/Acre	86.00 $ 0.00	Tractor + Spreader
Irrigating		10.00/Acre	360.00/Acre	370.00 $ 0.00	Irrigators + Pipe
Pest Control		50.00/Acre	16.00/Acre	66.00 $ 0.00	Tractor + Sprayer
Harvest		32.00/Acre	3600.00/Acre	3632.00 $ 0.00	Tractor + Lifter - wagons
Grading		5.00/Acre	3600.00/Acre	3605.00 $ 0.00	Cards - Belts
				$ 0.00	
Total Custom per Area	$ 0.00		User Total per area	17,112.00 $ 0.00	

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Worksheet 2-F. Methyl Bromide Fixed and Overhead Costs in 2001

If a consortium is submitting this application, the data for this table should reflect a **representative user.**	
Enter **all** fixe for a comprehensive definition of the fumigation cycle.	
Col A: Cost Item	Identify in Col. A the cost items. These items should include, but are not limited to: (1) land rent, (2) interest, (3) depreciation,
Col B: Description	Please describe the cost in more detail.
Col C: Allocation Method	Please describe how you estimated the portion of total fixed cost of the farm or entity that applies to this crop/commodity.
Col D: Cost per Area	Enter the cost per area of methyl bromide treated.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D
Cost Item	**Description**	**Allocation Method**	**Cost per Area**
Land	Cost to use the ground	We use 15% of our ground each year	200 $/Acre
Buildings	Cost to use the Buildings	Majority of the Methyl Bromide crops are processed thru ~ 80%	250 $/Acre
↓			
		Total	450.00 $0.00

Comments:

Worksheet 3. Alternatives - Feasibility of Alternative Pest Control Regimens

Purpose of Data on Alternative Pest Control Regimens: To estimate the loss as a result of not having methyl bromide available. EPA needs to compare data (yields, crop/commodity prices, gross revenues and costs) on the use of methyl bromide and alternative pest control regimens.

Complete each of the worksheets below (3-A, 3-B, 3-C, and 3-D) for each alternative pest control regimen listed in the "U.S. Matrix" for chemical controls (www.epa.gov/ozone/mbr/cueqa.html) and the "International Matrix" for non-chemical pest controls (www.epa.gov/ozone/mbr/cue). Each worksheet contains a place holder in the title for you to insert the name of the specific alternative pest control regimen addressed. You should add additional worksheets as required. Please add a number designation to each worksheet title to indicate a different alternative. For example, for the first alternative pest control regimen label the worksheets as 3-A(1), 3-B(1), 3-C(1), and 3-D(1). For the second alternative pest control regimen label the worksheets 3-A(2), 3-B(2), 3-C(2), and 3-(D)(2).

Enter all alternative pesticides and pest control methods (and associated cost and yield data) that would replace one treatment of methyl bromide throughout the fumigation cycle. See the fumigation cycle worksheet for a comprehensive definition.

Worksheet	Title	
3-A	Alternatives - Technical Feasibility	This form is used to obtain information on the chemical alternatives identified by the Methyl Bromide Technical Options Committee (MBTOC) that are registered for use in the United States, as well as the non-chemical alternatives identified by the MBTOC. Applicants **must** address the technical feasibility of all the chemical and non-chemical alternatives identified on the list.
3-B	Alternatives - Pest Control Regimen Costs	This form is used to estimate the cost of using alternative pest control regimens.
3-C	Alternatives - Crop/ Commodity Yield and Gross Revenue	This form is used to estimate the crop/commodity yields and gross revenues when using alternative pest control regimens.
3-D	Alternatives - Changes in Other Costs	This form is used to estimate change in any other costs as a result of using the alternatives.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each research study you use to evaluate a single methyl bromide alternative. Use additional pages as need.

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative, second research study, label the worksheet 3-A(1)(b). For the first alternative, third research study, label the worksheet 3-A(1)(c). For the second alternative, first research study, label the worksheet 3-(A)(2)(a). For the second alternative, second research study, label the worksheet 3-(A)(2)(b).

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet of relevant treatments should be provided for each study reviewed.

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible alternative pest control regimens for various crops, which can be found at http://www.epa.gov/ozone/mbr or by calling 1-800-296-1996.

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as application rates, application intervals, pest pressure, weather conditions, varieties of the crop used, etc. All results should be included, regardless of outcome. You must submit copies of each study to EPA unless they are listed on the Agency website.

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and other websites for studies that pertain to your crop and geographic area.

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives provided by the Agency and explain why they cannot be used for your crop and in your geographic area.

Use additional pages as needed.

Alternative: Basimid for Tree Nurseries [Insert Alternative] Study: [Insert Study Title]

Section I. Initial Screening on Technical Feasibility of Alternatives

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted — No
1b. Township caps — No
1c. Alternative not acceptable in consuming country — No
1d. Other (Please describe) — No

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? Yes X No _____

   1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) _____

3. Publication and Date of Publication _____

4. Location of research study _____

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.
   Basamid Granular

6. Was crop yield measured in the study? Yes _____ No _____

7. Describe the effectiveness of the alternative in controlling pests in the study.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?
   Basamid would provide adequate effectiveness in controlling our pest if we can provide a adequate seal locking in the basamid

Worksheet 3-A. Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

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Research Summary Table

Alternative: Basimid [Insert Alternative]

Study: Basimid for the Forest Nursery Industry [Insert Study Title]

Provide one summary table for each study being described.	
Provide a summary table of research information that will allow us compare the impact of methyl bromide and the alternative regimen on such things as pest control, yield or quality of the commodity being treated, or protected. Ideally, a research study should directly compare methyl bromide and the alternative regimen.	
Col. A: Treatment Number	List the treatment number from the research study you are citing.
Col. B: Treatment	List what type of pest control method was used.
Col. C: Rate	Enter the pounds or gallons of a chemical used, days of solarization, etc.
Col. D, F, H, J, L, N: Interval	Enter the interval after treatment that the rating was taken. Enter the interval (days, weeks or months) in the column heading or in the comments section. In the comments describe the rating scale (e.g. 0 to 100 where 100 is complete control).
Cols. E, G, I, K, M, O: Rating for Interval:	Use these columns to describe the level of control provided for a specific pest and the time interval at which the rating was taken. For example, a study for nematode control may have looked at nematode population in the soil pre-treatment, 3 weeks after treatment, and 6 weeks after treatment. In this example, type over the words "Rating Interval 1" with "pre-treatment", type over "Rating Interval 2" with "3 weeks", and type over "Rating Interval 3" with "6 weeks." If you are completing the printed version, please define Rating Interval in the comments below.
Control of Pests 1 and 2 (Cols. D - I and Cols. J - O):	For the target pest(s) in the study list the pest or pest species being rated in the column header or the comments section. For example, a study for nematode control in tomatoes may have looked at sting nematode and stunt nematode. Enter sting nematode for pest 1 in the Col F header below and stunt nematode for pest 2 in the Col. L header below. In the comments section describe the rating system used (0 to 100 scale where 0 is no control, number of nematodes per gram of soil, number of colony forming units per gram of soil, etc.)
Col. J: Yield	Enter the marketable yield of the crop or commodity and specify the units (lbs /acre, tons) in the column header or comments section.
Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Treatment Number	Treatment	Rate (lbs. or gals. ai per area)	Pest 1						Pest 2						Yield (units/area)
			Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating for Interval 3	Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating for Interval 3	
1	Basimid	250 lbs													
2	Methyl Bromide	375 lbs													

Comments:
Couldn't find any information from column D on.

Example Research Summary Table

Alternative: Example Study: _____

Provide one summary table for each study being described.

Provide a summary table of research information that will allow us compare the impact of methyl bromide and the alternative regimen on such things as pest control, yield or quality of the commodity being treated, or protected. Ideally, a research study should directly compare methyl bromide and the alternative regimen.

Col. A: Treatment Number	List the treatment number from the research study you are citing.
Col. B: Treatment	List what type of pest control method was used.
Col. C: Rate	Enter the pounds or gallons of a chemical used, days of solarization, etc.
Col. D, F, H, J, L, N: Interval	Enter the intervals (days, weeks or months) that the rating was taken for each treatment in Columns D, F, H, J, L, and N. For example, a study for nematode control may have looked at nematode population in the soil pre-treatment, 3 weeks after treatment, and 6 weeks after treatment. For this example, insert "pre-treatment" in the "Interval 1" column , insert "3 weeks" in the "Interval 2" column, and insert "6 weeks" in the "Interval 3" column."
Cols. E, G, I, K, M, O: Rating for Interval:	In columns E, G, I, K, M, and O insert the rating (the level of control provided for a specific pest) for each interval for each treatment described. In this example, for the methyl bromide treatment for sting nematode enter 669 for the "Rating for Interval 1", 221 for the "Rating for Interval 2", and 120 for the "Rating for Interval 3." In the comments section below describe the rating scale (e.g., nematodes per gram of soil, number of colony forming units per gram of soil, etc.).
Control of Pests 1 and 2 (Cols. D - I and Cols. J - O):	For the target pest(s) in the study list the pest or pest species being rated in the column header or the comments section. For example, a study for nematode control in tomatoes may have looked at sting nematode and stunt nematoda. Enter sting nematode for pest 1 in the Col F header below and stunt nematode for pest 2 in the Col. L header below. In the comments section describe the rating system used (0 to 100 scale where 0 is no control, number of nematodes per gram of soil, number of colony forming units per gram of soil, etc.)
Col. J: Yield	Enter the marketable yield of the crop or commodity and specify the units (lbs./acre, tons) in the column header or comments section.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Treatment Number	Treatment	Rate (lbs. or gals. al per area)	Sting nematode						Stunt nematode						Yield (lbs/acre)
			Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating for Interval 3	Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating Interval 3	
1	Untreated	-	pre-trt	700	3 wks	700	6 wks	707	pre-trt	100	3 wks	111	6 wks	109	5,000
2	Methyl Bromide	300 gal	pre-trt	669	3 wks	221	6 wks	120	pre-trt	98	3 wks	77	6 wks	36	8,000
3	Iodo methane	150 gal.	pre-trt	675	3 wks	250	6 wks	125	pre-trt	111	3 wks	35	6 wks	32	7,580

Comments:
Ratings are for nematodes per gram of soil

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Worksheet 3-B. Alternatives - Pest Control Regimen Costs for Alternative: Basimid [Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a representative user.	
Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the pesticides that replace methyl bromide for the entire interval. Do not include pesticides that are used along with methyl bromide--enter only the additional pest control if methyl bromide were not available. If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regarding the same product.
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J, M: Prices and Costs	Use 2001 prices and costs. If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in Col. I. Enter any other costs associated with applying this product in Col. J, specifying what they are in the comments section at the bottom of this sheet. Col. M will be calculated automatically using the data you have entered.
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied.
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	Target Pests	Active Ingredients (ai) in Product	Formulation of Product	Application Rate			Price per Unit of the Product	Cost of Applying Pesticide per Area	Other Costs per Application	Area Treated at Least Once	# of Applications per Year	Cost per Area (2001$)
				lbs. ai per Area per Application	Units of product per Area per Application	Product Unit (e.g., lbs., gals)						
Basimid	nematodes	Dazomet	98%	350	357	lbs	2.90	5.00		40A	1	$ 0.00
	fungi											$ 0.00
	Weed Seeds											$ 0.00
	Insects											$ 0.00
	bacteria											$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
Non-Chemical Pest Control	Target Pests	Description										Cost/area
											Total	$ 0.00

1040.30 / Acre

Comments:
If you do not have the quantitative data for additional crops grown on the same land, please indicate so in the comment section.

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Worksheet 3-B. Alternatives - Pest Control Regimen Costs for Alternative: Product X

If a consortium is submitting this application, the data for this table should reflect a representative user.	
Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regardin
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J, M: Prices and Costs	Use 2001 prices and costs. If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	Target Pests	Active Ingredients (ai) In Product	Formulation of Product	Application Rate			Price per Unit of the Product	Cost of Applying Pesticide per Area	Other Costs per Application per area	Area Treated at Least Once	# of Applications per Year	Cost per Area (2001$)
				lbs. ai per Area per Application	Units of product per Area per Application	Product Unit (e.g., lbs., gals)						
Product X	Pest Y, Pest Z	Chemical D, Chemical F	90% Chemical D, 10% Chemical F	250	278	lbs	$ 10.00	$ 20.00	0	25	1	$ 2,800.00
Product U	Pest V, Pest Y	Chemical C	100%	150	200	gal	$ 5.00	$ 20.00	10	25	2	$ 2,060.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00

Non-Chemical Pest Control	Target Pests	Description	Cost/area
Control P	Pest J, Pest K	Control P is done 2 times per year according to methods.	$500.00
		Total	$ 5,360.00

Comments:
If you do not have the quantitative data for additional crops grown on the same land, please indicate so in the comment section.

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Worksheet 3-C. Alternatives - Crop/Commodity Yield and Gross Revenue for Alternative

[Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a *representative* user.

The purpose of this worksheet is to identify the gross revenue for units (crop, commodity, structure) when using an alternative compared to gross revenue when using methyl bromide. Post-harvest and structural users may modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Crop/Commodity	Enter all crops/commodities that can be grown/treated during the same interval of time comprising a methyl bromide fumigation cycle. Please discuss changes in crop cycles resulting from alternative use in the comments. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter in Col. B any factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g., fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of alternatives affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for your crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor identified.
Col. E: Price	Enter the average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Gross Revenue	In the electronic version, revenue is automatically calculated below using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A Crop/Commodity	B Price Factors (grade, time, market)	C Unit of Crop/Commodity (e.g., pounds, bushels)	D Crop/Commodity Yield (Units per area)	E Price (per unit of crop/commodity)	F Revenue (per area)
Tree Seedlings		Individual	123,000 /Acre	6.5 cents/tree	82,560 /Ac $ 0.00
Shrub Seedlings		Individual	60,000/Acre	34 cents/shrub	20,400 /Ac $ 0.00
Forb Root Stock		Individual	200,000/Acre	4 Cents each	8,000 /Ac $ 0.00
Forb Seed		Pounds	450 /Acre	39.33 per lb	17,685 /Ac $ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	129,645 /Ac $ 0.00

Comments: I estimate there may be less production with Basimid due mainly with my concern of getting a good seal and not having a effective fumigation.

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Worksheet 3-D. Alternatives - Changes in Other Costs for Alternative: Basimid [Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a *representative user*.

Enter data only for costs (other than the cost of alternative pest control) that change as a result of using the alternatives instead of methyl bromide. Enter the whole cost, not just the incremental changes. Enter the cost in Col. B for custom operation costs, or in Col. C and D for operations done by user.

Col. A: Operation or Cost Item	Identify the operations or cost items that change as a result of not using methyl bromide.
Col. B: Custom Operation Cost	Enter custom operation costs that change in Col. B.
Col. C, D, E: Costs per Area	Enter in Col. C and D, material and labor costs per area that change for operations done by user. The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col. F: Typical Equipment Used	Identify changes in the typical equipment used by the user as a result of not using methyl bromide. Please be specific such as tractor horsepower. No cost data are required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F
Operation or Cost Item	Custom Operation Cost per Area	Operation Done by User			Typical Equipment Used
		Material Cost per Area	Labor Cost per Area	Total Cost per Area	
Spreading Basimid			5.00/Acre	5.00 $ 0.00	Tractor + spreader
Basimid		1035.30/Ac		1035.30 $ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
Total Custom per Area	$ 0.00		User Total per area	1040.30 $ 0.00	

Comments:

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Worksheet 3-A-2 Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

In this worksheet, you should address why an alternative pest management strategy on the list (see previous page) is or is not effective for your conditions. This worksheet contains 9 questions. You must complete one copy of worksheet 3-A for each research study you use to evaluate a single methyl bromide alternative. Use additional pages as need.

For worksheet 3-A you must complete one worksheet for each alternative, for each research study addressed. Please number the worksheets as follows. For the same alternative, first research study, label the worksheet 3-A(1)(a). For the same alternative, second research study, label the worksheet 3-A(1)(b). For the first alternative, third research study, label the worksheet 3-A(1)(c). For the second alternative, first research study, label the worksheet 3-(A)(2)(a). For the second alternative, second research study, label the worksheet 3-(A)(2)(b).

When completing Section II, if you cite a study that is on the EPA website, you only need to complete questions 1, 5, and 8.

If you prefer, you may provide the information requested in this worksheet in a narrative review of one or more relevant research reports. The narrative review must reply to Section I and questions 1 through 8 in Section II. A Research Summary Worksheet of relevant treatments should be provided for each study reviewed.

BACKGROUND

EPA must consider whether alternative pest control measures (pesticide and non-pesticidal, and their combination) could be used successfully instead of methyl bromide by crop and circumstance (geographic area.) The Agency has developed a list of possible alternative pest control regimens for various crops, which can be found at http://www.epa.gov/ozone/mbr or by calling 1-800-296-1996.

There are three major ways you can provide the Agency with proof of your investigative work.
(1) Conduct and submit your own research
(2) Cite research that has been conducted by others
(3) Cite research listed on the EPA website

Whether you conduct the research yourself or cite studies developed by others, it is important that the studies be conducted in a scientifically sound manner. The studies should include a description of the experimental methodology used, such as application rates, application intervals, pest pressure, weather conditions, varieties of the crop used, etc. All results should be included, regardless of outcome. You must submit copies of each study to EPA unless they are listed on the Agency website.

The Agency has posted many research studies on a variety of crops on its website and knows of more studies currently in progress. EPA will add studies to its website as they become publicly available. You are encouraged to review the EPA website and other websites for studies that pertain to your crop and geographic area.

In addition, EPA acknowledges that, for certain circumstances, some alternatives are not technically feasible and therefore no research has been conducted (i.e. solarization may not be feasible in Seattle). You should look at the list of alternatives provided by the Agency and explain why they cannot be used for your crop and in your geographic area.

Use additional pages as needed.

Alternative: Telone, Chloropicrin and Telone Combinations Study: [Insert Study Title]

Section I. Initial Screening on Technical Feasibility of Alternatives

Replace Methyl Bromide for preplant soil fungal with Telone Chloropicrin and Telone Combinations

1. Are there any location-specific restrictions that inhibit the use of this alternative on your site?

1a. Full use permitted — No
1b. Township caps — No
1c. Alternative not acceptable in consuming country — No
1d. Other (Please describe) — No

If use of this alternative is precluded by regulatory restriction for all users covered by this application, the applicant should not complete Section II.

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Worksheet 3-A. 2 Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

Section II. Existing Research Studies on Alternatives to Methyl Bromide

1. Is the study on EPA's website? Yes X No _____

   1a. If not on the EPA website, please attach a copy.

2. Author(s) or researcher(s) _____

3. Publication and Date of Publication _____

4. Location of research study _____

5. Name of alternative(s) in study. If more than one alternative, list the ones you wish to discuss.
   Telone, Chlorpicrin and Tilla combination

6. Was crop yield measured in the study? Yes _____ No _____

7. Describe the effectiveness of the alternative in controlling pests in the study.

8. Discuss how the results of the study apply to your situation. Would you expect similar results? Are there other factors that would affect your adoption of this tool?
   Results have been consistent with Methyl Bromide according to the case study. If the farm has the right amount of land it may work.

Worksheet 3-A. 2 Alternatives - Technical Feasibility of Alternatives to Methyl Bromide

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Research Summary Table

Alternative: Telone, Chloropicrin and Tillam [Insert Alternative]

Study: Replacing Methyl Bromide for preplant soil fumigation with Telone, Chloropicrin, and Tillam combination [Insert Study Title] Treatments

Provide one summary table for each study being described.	
Provide a summary table of research information that will allow us compare the impact of methyl bromide and the alternative regimen on such things as pest control, yield or quality of the commodity being treated, or protected. Ideally, a research study should directly compare methyl bromide and the alternative regimen.	
Col. A: Treatment Number	List the treatment number from the research study you are citing.
Col. B: Treatment	List what type of pest control method was used.
Col. C: Rate	Enter the pounds or gallons of a chemical used, days of solarization, etc.
Col. D, F, H, J, L, N: Interval	Enter the interval after treatment that the rating was taken. Enter the interval (days, weeks or months) in the column heading or in the comments section. In the comments describe the rating scale (e.g. 0 to 100 where 100 is complete control).
Cols. E, G, I, K, M, O: Rating for Interval:	Use these columns to describe the level of control provided for a specific pest and the time interval at which the rating was taken. For example, a study for nematode control may have looked at nematode population in the soil pre-treatment, 3 weeks after treatment, and 6 weeks after treatment. In this example, type over the words "Rating Interval 1" with "pre-treatment", type over "Rating Interval 2" with "3 weeks", and type over "Rating Interval 3" with "6 weeks." If you are completing the printed version, please define Rating Interval in the comments below.
Control of Pests 1 and 2 (Cols. D - I and Cols. J - O):	For the target pest(s) in the study list the pest or pest species being rated in the column header or the comments section. For example, a study for nematode control in tomatoes may have looked at sting nematode and stunt nematode. Enter sting nematode for pest 1 in the Col F header below and stunt nematode for pest 2 in the Col. L header below. In the comments section describe the rating system used (0 to 100 scale where 0 is no control, number of nematodes per gram of soil, number of colony forming units per gram of soil, etc.)
Col. J: Yield	Enter the marketable yield of the crop or commodity and specify the units (lbs./acre, tons) in the column header or comments section.
Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.	

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Treatment Number	Treatment	Rate (lbs. or gals. ai per area)	Pest 1						Pest 2						Yield (units/area)
			Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating for Interval 3	Interval 1	Rating for Interval 1	Interval 2	Rating for Interval 2	Interval 3	Rating for Interval 3	
1	Telone C-17	17 gal/Ac													
2	Tillam	2 lbs/Ac													

Comments:
Not enough data available to begin / column C.

Example Research Summary Table

Alternative: Example Study: _____

Provide one summary table for each study being described.

Provide a summary table of research information that will allow us compare the impact of methyl bromide and the alternative regimen on such things as pest control, yield or quality of the commodity being treated, or protected. Ideally, a research study should directly compare methyl bromide and the alternative regimen.

Col. A: Treatment Number	List the treatment number from the research study you are citing.
Col. B: Treatment	List what type of pest control method was used.
Col. C: Rate	Enter the pounds or gallons of a chemical used, days of solarization, etc.
Col. D, F, H, J, L, N: Interval	Enter the intervals (days, weeks or months) that the rating was taken for each treatment in Columns D, F, H, J, L, and N. For example, a study for nematode control may have looked at nematode population in the soil pre-treatment, 3 weeks after treatment, and 6 weeks after treatment. For this example, insert "pre-treatment" in the "Interval 1" column , insert "3 weeks" in the "Interval 2" column, and insert "6 weeks" in the "Interval 3" column."
Cols. E, G, I, K, M, O: Rating for Interval:	In columns E, G, I, K, M, and O insert the rating (the level of control provided for a specific pest) for each interval for each treatment described. In this example, for the methyl bromide treatment for sting nematode enter 669 for the "Rating for Interval 1", 221 for the "Rating for Interval 2", and 120 for the "Rating for Interval 3." In the comments section below describe the rating scale (e.g., nematodes per gram of soil, number of colony forming units per gram of soil, etc.).
Control of Pests 1 and 2 (Cols. D - I and Cols. J - O):	For the target pest(s) in the study list the pest or pest species being rated in the column header or the comments section. For example, a study for nematode control in tomatoes may have looked at sting nematode and stunt nematode. Enter sting nematode for pest 1 in the Col F header below and stunt nematode for pest 2 in the Col. L header below. In the comments section describe the rating system used (0 to 100 scale where 0 is no control, number of nematodes per gram of soil, number of colony forming units per gram of soil, etc.)
Col. J: Yield	Enter the marketable yield of the crop or commodity and specify the units (lbs./acre, tons) in the column header or comments section.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Treatment Number	**Treatment**	**Rate (lbs. or gals. ai per area)**	**Sting nematode**						**Stunt nematode**						**Yield (lbs/acre)**
			Interval 1	**Rating for Interval 1**	**Interval 2**	**Rating for Interval 2**	**Interval 3**	**Rating for Interval 3**	**Interval 1**	**Rating for Interval 1**	**Interval 2**	**Rating for Interval 2**	**Interval 3**	**Rating Interval 3**	
1	Untreated	-	pre-trt	700	3 wks	700	6 wks	707	pre-trt	100	3 wks	111	6 wks	109	5,000
2	Methyl Bromide	300 gal.	pre-trt	669	3 wks	221	6 wks	120	pre-trt	98	3 wks	77	6 wks	36	8,000
3	Iodo methane	150 gal.	pre-trt	675	3 wks	250	6 wks	125	pre-trt	111	3 wks	35	6 wks	32	7,580

Comments:

Ratings are for nematodes per gram of soil

OMB Control # 2060-0482

Telone C-17 + Tillam

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Worksheet 3-B. 2 Alternatives - Pest Control Regimen Costs for Alternative: [Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a representative user.	
Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown during the interval between fumigations (e.g. tomatoes followed by peppers in a single growing season, or strawberries followed by lettuce over 2 or 3 years) include all of the pesticides that replace methyl bromide for the entire interval. Do not include pesticides that are used along with methyl bromide--enter only the additional pest control if methyl bromide were not available. If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regarding the same product.
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J, M: Prices and Costs	Use 2001 prices and costs. If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in Col. I. Enter any other costs associated with applying this product in Col. J, specifying what they are in the comments section at the bottom of this sheet. Col. M will be calculated automatically using the data you have entered.
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied.
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	Target Pests	Active Ingredients (ai) in Product	Formulation of Product	Application Rate			Price per Unit of the Product	Cost of Applying Pesticide per Area	Other Costs per Application	Area Treated at Least Once	# of Applications per Year	Cost per Area (2001$)
				lbs. ai per Area per Application	Units of product per Area per Application	Product Unit (e.g., lbs., gals)						
Telone C-17	nematodes	77.9%	1,3-dichloropropene	16.2 gal	17½ gal	gal	13.25/gal					$ 0.00
	fungi	17%	Chloropicrin			gal						$ 0.00
Tillam	Bacteria	77.32%	pebulate	2 lbs	2.6 lbs	lbs	7.66/lb a.i.					$ 0.00
	Inert & oil											$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00

1500/Acre for Both

Non-Chemical Pest Control	Target Pests	Description	Cost/area
		Total	$ 0.00

Comments:
If you do not have the quantitative data for additional crops grown on the same land, please indicate so in the comment section.

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Worksheet 3-B. Alternatives - Pest Control Regimen Costs for Alternative: Product X

If a consortium is submitting this application, the data for this table should reflect a **representative user.**	
Col. A: Name of Product and Non-chemical Control	Enter all alternatives and non-chemical pest control that would replace one treatment of methyl bromide throughout the fumigation cycle. See the Fumigation Cycle Worksheet for a comprehensive definition of the fumigation cycle. If multiple crops are grown If someone other than the applicant previously benefited from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Target Pests	Be as specific as possible regarding the species or classes of pests controlled by the active ingredient or pesticide product.
Col. C: Active Ingredients	Use one row for each active ingredient (ai). For example, if a product contains 2 ai's use 2 rows for that product. Once a row is completed for a given product, then only Col. B (if applicable), C, and E need to be completed for additional rows regardin
Col. D: Formulation	Enter the formulation or the % of active ingredient.
Col. E, F, G: Application Rate	As a cross check, EPA is requesting both the amount of active ingredient in Col. E and product applied per area in Col. F. Indicate the unit of the product in Col. G.
Col. H, I, J, M: Prices and Costs	**Use 2001 prices and costs.** If the product is custom applied you may enter the total cost in the last column (Col. M) and override the formula. If a pesticide is applied by the user, enter the price of the product in Col. H and the cost of applying it in
Col. K: Area Treated	Enter the area receiving at least one application of the pesticide.
Col. L: # of Applications per Year	Enter the number of applications in a fumigation cycle comparable to methyl bromide for this alternative pest control regimen. Since this number is an average, it does not need to be a whole number.
Col. M: Cost per Area in 2001 Dollars	Enter the cost per area in 2001 dollars. Col. M will be calculated automatically using the data you have entered for a chemical pest control, or, the formula in Col. M can be overridden if the cost per area is known because the product was custom applied
Non-chemical Control	Enter data near the bottom of the form. Identify the control in Col. A. Enter the target pests in Col. B. Describe the non-chemical pest control Col. B-L. Enter the costs in Col. M in 2001 dollars.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A	B	C	D	E	F	G	H	I	J	K	L	M
Name of Product	**Target Pests**	**Active Ingredients (ai) in Product**	**Formulation of Product**	**Application Rate**			**Price per Unit of the Product**	**Cost of Applying Pesticide per Area**	**Other Costs per Application per area**	**Area Treated at Least Once**	**# of Applications per Year**	**Cost per Area (2001$)**
				lbs. ai per Area per Application	**Units of product per Area per Application**	**Product Unit (e.g., lbs., gals)**						
Product X	Pest Y, Pest Z	Chemical D, Chemical F	90% Chemical D, 10% Chemical F	250	278	lbs	$ 10.00	$ 20.00	0	25	1	$ 2,800.00
Product U	Pest V, Pest Y	Chemical C	100%	150	200	gal	$ 5.00	$ 20.00	10	25	2	$ 2,060.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
												$ 0.00
Non-Chemical Pest Control	**Target Pests**	**Description**										**Cost/area**
Control P	Pest J, Pest K	Control P is done 2 times per year according to methods.										$500.00
											Total	$ 5,360.00

Comments:
If you do not have the quantitative data for additional crops grown on the same land, please indicate so in the comment section.

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Worksheet 3-C. 2 Alternatives - Crop/Commodity Yield and Gross Revenue for Alternative Telone C-17 and Tillam
[Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a *representative* user.

The purpose of this worksheet is to identify the gross revenue for units (crop, commodity, structure) when using an alternative compared to gross revenue when using methyl bromide. Post-harvest and structural users may modify this form to accommodate differences in operations when providing gross revenue data.

Col. A: Crop/Commodity	Enter all crops/commodities that can be grown/treated during the same interval of time comprising a methyl bromide fumigation cycle. Please discuss changes in crop cycles resulting from alternative use in the comments. See the Fumigation Cycle Worksheet for a comprehensive definition of the *fumigation cycle.* If someone other than the applicant benefits from the application of methyl bromide in the fumigation cycle and you do not have the quantitative data for the crops grown on the same land, please indicate so in the comments section below.
Col. B: Price Factors	Enter in Col. B any factors that determine prices (e.g., grade, time, market). If you received different prices for your crop/commodity as a result of quality, grade, market (e.g., fresh or processing), timing of harvest, etc., you may itemize by using more than one row. Itemize or aggregate these factors to the extent appropriate in making the case that the use of alternatives affects these price factors.
Col. C: Unit of Crop/Commodity	Enter the unit of measurement for your crop/commodity.
Col. D: Crop/Commodity Yield	Enter the number of units of crop/commodity produced per area for that price factor identified.
Col. E: Price	Enter the average 2001 prices received by the users for that crop/commodity and price factor.
Col. F: Gross Revenue	In the electronic version, revenue is automatically calculated below using the data you entered for yield and price. If revenue is not equal to yield times price, you may override the formula and enter a different revenue amount. Please explain why this revenue amount is different in the comment section

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations, and square feet for structural applications.

A Crop/Commodity	B Price Factors (grade, time, market)	C Unit of Crop/Commodity (e.g., pounds, bushels)	D Crop/Commodity Yield (Units per area)	E Price (per unit of crop/commodity)	F Revenue (per area)
Tree Seedlings		Individual	122,000 / Acre	68 cents / tree	82,960 / Ac $ 0.00
Shrub Seedlings		Individual	60,000 / Acre	34 cents / shrub	20,400 / Ac $ 0.00
Herb Root Stock		Individual	2,000,000 / Acre	4 cents each	8,000 / Ac $ 0.00
Herb Seed		pounds	450 / Acre	39.30 per lb	17,685 / Ac $ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
					$ 0.00
				Total Revenue	129,045 / Ac $ 0.00

Comments:

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Worksheet 3-D: 2 Alternatives - Changes in Other Costs for Alternative: Telone C-17 & Tillam [Insert name of alternative]

If a consortium is submitting this application, the data for this table should reflect a *representative user*.

Enter data only for costs (other than the cost of alternative pest control) that change as a result of using the alternatives instead of methyl bromide. Enter the whole cost, not just the incremental changes. Enter the cost in Col. B for custom operation costs, or in Col. C and D for operations done by user.

Col. A: Operation or Cost Item	Identify the operations or cost items that change as a result of not using methyl bromide.
Col. B: Custom Operation Cost	Enter custom operation costs that change in Col. B.
Col. C, D, E: Costs per Area	Enter in Col. C and D, material and labor costs per area that change for operations done by user. The total cost per area is calculated automatically from the values you enter in Cols. C and D.
Col. F: Typical Equipment Used	Identify changes in the typical equipment used by the user as a result of not using methyl bromide. Please be specific such as tractor horsepower. No cost data are required in this column.

Area is defined below as follows for each user: acres for growers, cubic feet for post-harvest operations. and square feet for structural applications.

A	B	C	D	E	F
Operation or Cost Item	Custom Operation Cost per Area X	Operation Done by User			Typical Equipment Used
		Material Cost per Area	Labor Cost per Area	Total Cost per Area	
Telone C-17 and Tillam				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
				$ 0.00	
Total Custom per Area	$ 0.00		User Total per area	$ 0.00	

Comments: No change in cost vs Methyl Bromide

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Worksheet 4. Alternatives - Future Research Plans

Please describe future plans to test alternatives to methyl bromide. (All available methyl bromide alternatives from the alternatives list should have been tested or have future tests planned.) There is no need to complete a separate worksheet for future research plans for each alternative - you may use this worksheet to describe all future research plans.

1. Name of study: Basinid Trials

2. Researcher(s): Gale Langley

3. Your test is planned for: 2003

4. Location: Mason State Tree Nursery

5. Name of alternative to be tested:

Basinid

6. Will crop yield be measured in the study? Yes X No _____

7. If additional testing is not planned, please explain why. (For example, the available alternatives have been tested and found unsuitable, an alternative has been identified but is not yet registered for this crop, available alternatives are too expensive for this crop, etc.)

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Worksheet 5. Additional Information

1. **How will you minimize your use and/or emissions of methyl bromide?**

   1a. Check all methods you will use
   ____ Nothing
   ____ Tarpaulin (high density polyethylene)
   ____ Virtually impermeable film (VIF)
   ____ Cultural practices (please specify) _____

   1b. Will you use other pesticides to reduce use of methyl bromide? Yes X No ____

   If yes please specify. Basimid

   1c. Other non-chemical methods: (please specify):
   More Weeding

2. **Do you have access to recycled methyl bromide?** Yes ____ No X

   If yes, how many pounds? _____ lbs.

3. **Do you anticipate that you will have any methyl bromide in storage on January 1, 2005?** Yes ____ No X

   If yes, how many pounds? _____ lbs.

4. **What is the cumulative amount spent to date by the user or consortium on research to develop alternatives to methyl bromide (beginning in 1992)?** $ 0

5. **Other investments, if any, made to reduce your reliance on methyl bromide. Describe each investment and its associated cost.**
   None

6. **Identify what factors would allow you to stop or reduce your use of methyl bromide (e.g. registration of particular pesticide; completion of research plan; capital outlay).**
   If Basimid proved to be reliable and effective

   When do you expect these to occur? ?

7. **Range of acres farmed by growers included in this application?**
   (insert number of users in each category)

   ____ 0-10 acres
   ____ 10-25 acres
   ____ 25-50 acres
   ____ 50-100 acres
   ____ 100-200 acres
   2 200-400 acres
   ____ over 400 acres

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Worksheet 5. Additional Information (continued)

8. **Range of square feet of the area to which applicants included in this application will apply methyl bromide?** (insert number of users in each category)

___ 0 - 5,000 sq. ft.
___ 5,001 - 10,000 sq. ft.
___ 10,001 - 20,000 sq. ft.
___ 20,001 - 40,000 sq. ft.
___ 40,001 - 80,000 sq. ft.
___ 80,001 - 160,000 sq. ft.
1 over 160,000 sq. ft.

I certify that all information contained in this document is factual to the best of my knowledge.

Signature Gale Ryley **Date** 8-19-02

Print Name Gale Ramplen **Title** Assistant Nursery Manager

Information in this application may be aggregated with information from other applications and used by the United States government to justify claims in the national nomination package that a particular use of methyl bromide be considered "critical" and authorized for an exemption beyond the 2005 phaseout. Use of aggregate data will be crucial to making compelling arguments in favor of critical use exemptions. **By signing below**, you agree not to assert any claim of confidentiality that would affect the disclosure by EPA of aggregate information based in part on information contained in this application.

Signature Gale Ryley **Date** 8-19-02

Print Name Gale Ramplen **Title** Assistant Nursery Manager

OMB Control # 2060-0482

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Worksheet 6. Application Summary

This worksheet will be posted on the web to notify the public of requests for critical use exemptions beyond the 2005 phase out for methyl bromide. Therefore, this worksheet cannot be claimed as CBI.

1. Name of Applicant: Mason State Tree Nursery
2. Location: Topeka IL
3. Crop: Tree Seedlings, Shrub Seedlings, Forb Root Stock and Forb Seed
4. Pounds of Methyl Bromide Requested 2005 9400 lbs
5. Area Treated with Methyl Bromide 2005 40 Acres _____ units
6. If methyl bromide is requested for additional years, reason for request:

I'm not convinced the alternatives will provide adequate results

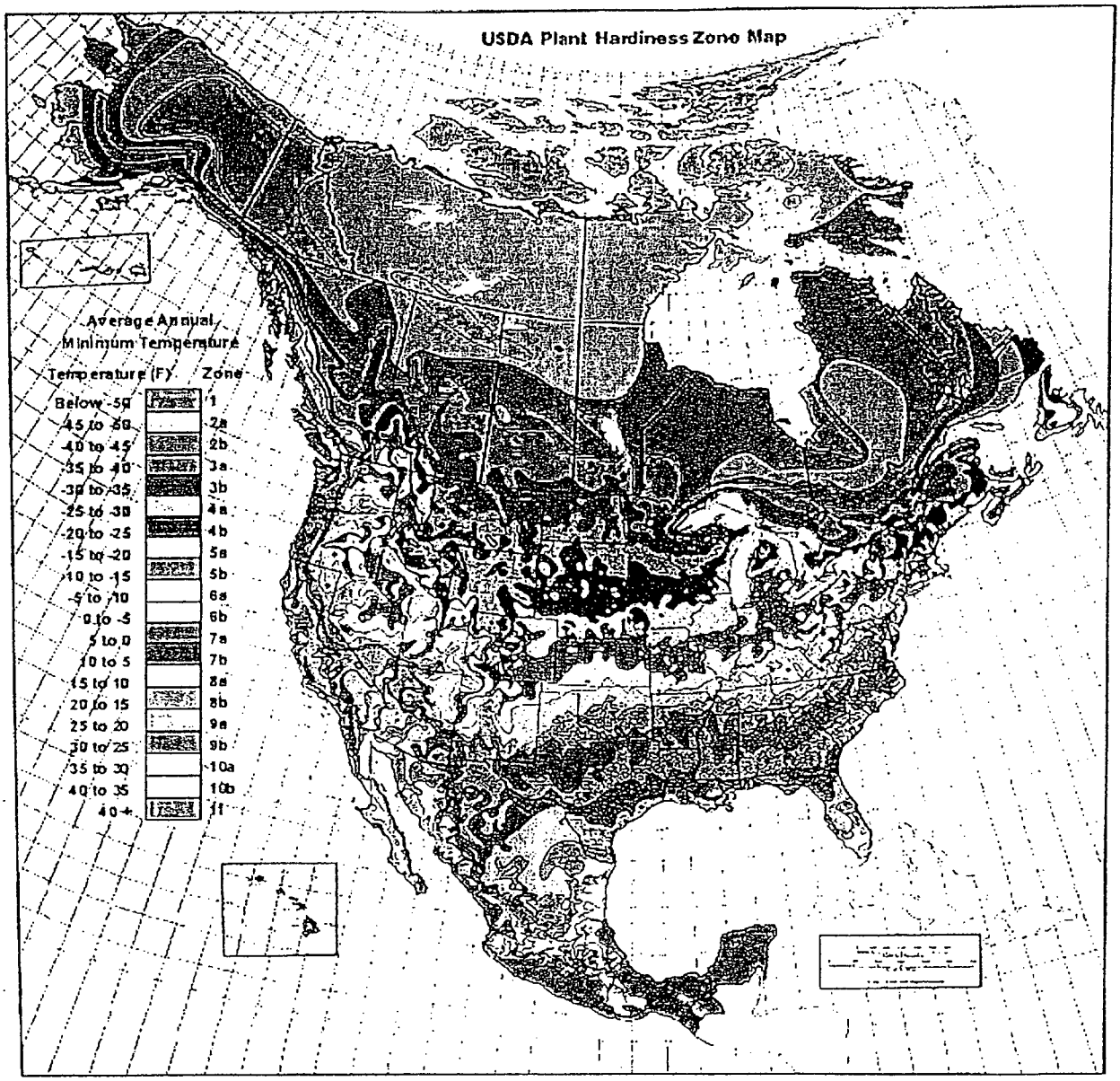
2006 9400 lbs. Area Treated 40 Acres _____ units
2007 9400 lbs. Area Treated 40 Acres _____ units

Place an "X" in the column(s) labeled "Not Technically Feasible" and/or "Not Economically Feasible" where appropriate. Use the "Reasons" column to describe why the potential alternative is not feasible.

Potential Alternatives	Not Technically Feasible	Not Economically Feasible	Reasons
Basimid	X		May not get a good seal therefore unsatisfactory results
Steam or Hot Water	X		We have several acres and no equipment to do it with
Telone C-17 and Tillam	X		results are not as good as methyl Bromide
Metam sodium	X		Results are to inconsistent and unreliable

Fumigation Cycle Definitions:

Fumigation cycle:	The period of time between methyl bromide fumigations.
Year:	If a fumigation cycle overlaps more than one calendar year, "year" refers to the calendar year when methyl bromide is applied (or the beginning of the cycle).
Comparable data:	In order to compare revenues and costs with and without methyl bromide, data on alternatives for pest control, yields, revenues, and costs must be for the same time interval as the methyl bromide fumigation cycle. If, however, quantitative data, is not available for the entire fumigation cycle, then to be comparable, the quantitative data for the alternatives should cover the same portion of the fumigation cycle as the quantitative data for methyl bromide, and the rest of the cycle should be discussed in the comments sections.
2-year example:	If a methyl bromide fumigation is made every 2 years, then the 2001 fumigation cycle began in 2001 and would end in 2003. The data should cover the methyl bromide costs and usage for the methyl bromide fumigation made in 2001, and all yields and revenues received and other costs incurred during the 2 year period. To be comparable, the data on alternatives should cover a similar 2 year period beginning in 2005 beginning at the same time of year when a methyl bromide fumigation would be made. The data should cover all methyl bromide alternatives used, and all yields and revenues received during that 2-year interval. Other pest control and other costs would only need to be provided for that interval if they would change from what they were with methyl bromide.
Other beneficiary example	If someone other than the applicant benefits from a methyl bromide fumigation, you should comment on these benefits if you do not have quantitative data for the entire fumigation cycle. For example, if a rotational crop in the second year benefits from a methyl bromide fumigation a year earlier, but there is quantitative data only on the first crop, then the data on the alternatives should cover only the first crop, and the benefits of methyl bromide and the additional pesticides that would have to be used on the rotational crop should be discussed in the comments sections.
Crop cycle change example:	If in a one year interval, methyl bromide is applied, tomatoes are grown and harvested followed by peppers, then the fumigation cycle would be one year including the tomatoes and peppers. If, however, without methyl bromide, it is not possible to follow tomatoes with peppers in the same one year interval, then the alternative data on pesticides, costs, yields, and revenues should just cover tomatoes. The loss of profit from not being able to grow peppers with the alternatives would be part of the loss from not having methyl bromide.


USDA Plant Hardiness Zone Map
Average Annual
Minimum Temperature
Temperature (F)
Zone
Below -50
1
-45 to -50
2a
-40 to -45
2b
-35 to -40
3a
-30 to -35
3b
-25 to -30
4a
-20 to -25
4b
-15 to -20
5a
-10 to -15
5b
-5 to -10
6a
0 to -5
6b
5 to 0
7a
10 to 5
7b
15 to 10
8a
20 to 15
8b
25 to 20
9a
30 to 25
9b
35 to 30
10a
40 to 35
10b
40 +
11